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18. (New) The luminescently labeled component of claim 17 in which the component is a molecule selected from the group consisting of antibodies, proteins, peptides, enzyme substrates, hormones, lymphokines, metabolites, receptors, antigens, haptens, lectins, toxins, carbohydrates, sugars, oligosaccharides, polysaccharides, nucleotides, derivatized nucleotides, nucleic acids, deoxy nucleic acids, derivatized nucleic acids, derivatized deoxy nucleic acids, DNA fragments, RNA fragments, derivatized DNA fragments, derivatized RNA fragments and drugs.

19. (New) The luminescently labeled component of claim 17 in which the component is selected from the group consisting of soluble polymers, plastics and glass surfaces.

20. (New) A protein, nucleic acid, cell, sugar or carbohydrate having at least one amino or hydroxyl group labeled with a luminescent cyanine dye.

21. (New) A method for detecting a component in a sample comprising the steps of:

- (a) contacting a sample containing or suspected to contain the component to be detected with a specific binding reagent labeled with a luminescent dye wherein said dye is selected from the group consisting of cyanine, merocyanine and styryl dyes containing at least one sulphonate or sulphonic acid attached to an aromatic nucleus; and
- (b) detecting the presence of the component.

22. (New) A method for detecting the presence of a secondary component in a sample comprising the steps of:

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- (a) adding to a liquid containing a primary component complementary to the secondary component to be detected a luminescent dye selected from the group consisting of cyanine, merocyanine and styryl dyes containing at least one sulphonate or sulphonic acid attached to an aromatic nucleus to covalently bind the luminescent dye to the primary material;
  - (b) adding the primary component covalently bound with the luminescent dye to a sample containing or suspected to contain the secondary component; and
  - (c) detecting the presence of the secondary component.

23. (New) A method of distinguishing a plurality of secondary components, said method comprising:

- (a) separately labeling each of a plurality of primary components with a different luminescent dye selected from the group consisting of cyanine, merocyanine or styryl dyes containing at least one sulphonate or sulphonic acid attached to an aromatic nucleus wherein each dye has a different absorption and luminescence wavelength and wherein each said primary component is specific for a different secondary component;
- (b) adding to a liquid containing or suspected to contain said plurality of secondary components a mixture of said labeled primary components under conditions to promote specific binding between complementary (specific) binding pairs; and

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(c) irradiating the mixture formed in step (b) at each of the absorption wavelengths of said luminescent dyes and measuring the fluorescence at the corresponding emission wavelength by optical means.

24. (New) A method according to claim 23 wherein said complementary specific binding pairs are selected from: antibody/antigen, DNA/cDNA, DNA/RNA, RNA/DNA, lectin/carbohydrate, ligand/receptor.

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